"Now, these disadvantages may be obviated by employing the solvent remedies, used in the form of *injection;* these should not only be strong and frequently repeated, but they should be retained in the bladder as long as possible, or should be injected in a continuous stream.

"I am, of course, aware that injections have been tried occasionally in the treatment of stone, with more or less success; but they are not resorted to nearly so frequently as they ought to be, nor have they been employed in the manner most conducive to success.

"I would not be understood as recommending the use of vesical injections to the exclusion of constitutional treatment; this, of course, should be persevered in as well.

"Again, in some cases, medical may be combined with surgical treatment; that is, the stone having been reduced to fragments by the lithotrite, the solution of the fragments should be attempted by the employment of suitable remedies, both through the medium of the constitution and locally by injection.

"The conditions of the urine tending to the production of stone which call for treatment are those in which that fluid contains persistent deposits of uric acid, urates, oxalate of lime, cystine, and the earthy phosphates. The calculi ordinarily met with are composed entirely or in part of one or other of these compounds; those composed of uric oxide, silicic acid, and carbonate of lime, are of such rare occurrence that it is scarcely necessary to take them into consideration at all.

"The following figures show the relative frequency of the occurrence of the calculi most commonly met with:—

"Of 1000 calculi, the composition of which has been ascertained, 372 consisted of *uric acid,* alone, or mixed with small quantities of the urates and oxalate or phosphate of lime; 253 of the *earthy phosphates,* chiefly fusible calculi; 233 of varying layers of *uric acid, oxalate of lime,* and *earthy phosphates;* 142 of *oxalate of lime.*

"The urinary deposits and calculi most readily acted upon by solvent remedies are the several earthy phosphates and cystine; and, therefore, it is in these cases especially that the greatest amount of success is to be anticipated from the treatment here recommended.

"I have now a few remarks to make on the subject of the *diagnosis* of calculi.

"In general, but few attempts are made by the surgeon to determine, either during the existence of a calculus or prior to an operation, the chemical composition of the calculus, and yet the microscope affords a ready and satisfactory means by which this object may generally be accomplished. Thus the composition of the stone may frequently be determined, with considerable accuracy, by ascertaining, by means of the microscope, the ordinary deposit or deposits occurring in several consecutive samples of the same urine. The determination of the composition of the calculus is not, indeed, often a matter of much importance to the surgeon, who is about to remove the stone by operation; but to the physician, proposing to treat the case medically, it is a point of the utmost moment, because it is only upon this knowledge that the proper and exact line of treatment to be pursued can be based. There is yet another way in which the composition of calculi may be determined, namely, by a chemical examination of the fragments usually passed after the operation of crushing by the lithotrite."

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30. *Fracture through the Trochanters of the Thigh-Bone.* By JAMES SYME, Esq., Prof. of Surg.—George T., æt. 23, recommended by Dr. Anderson, of Selkirk, was admitted into the hospital under my care, on the 15th of January last, suffering from an injury which had been caused two days before, by a sack of flour falling with great force upon his left hip. I found him lying in bed, with the injured limb shortened, the trochanter major higher up, and more prominent than natural, and the knee turned over the sound one; in short, presenting all the characters of dislocation upwards and backwards. But, as a moderate degree of extension restored the proper aspect, and did so only while it continued in operation, I concluded that the injury was a fracture through the

trochanters, in that peculiar direction which the late Mr. Guthrie had the merit of showing might cause eversion of the limb, and of which I placed on record soon after the publication of his paper, another case confirming by the evidence of dissection the correctness of this explanation.

Previously to Mr. Guthrie's observation, there was much diversity of professional opinion on this subject, and the most eminent surgical authorities were completely at variance with regard to it. Thus, while Paré and Petit had recorded particular examples of the fractured limb being inverted, Louis and Sabatier denied that such a condition ever occurred. Boyer declared that he had neither met with it, nor could imagine the possibility of its occurrence; and Desault, on the other hand, calculated its frequency as being in the proportion of one to four of the cases in which the toes are everted. The causes of eversion being the weight of the limb tending in that direction, as may be seen in a dead body, aided by action of the muscles, especially the flexors of the knee, the iliacus internus and psoas magnus, and the rotators passing from the pelvis to the trochanter major, while the principal or almost sole counteracting force lies in the anterior portion of the two smaller glutæi muscles inserted into the forepart of the trochanter major, turning outwards of the limb should certainly be expected as the consequence of this fracture. But it was found by Mr. Guthrie, in examining the body of a patient, who had presented the unusual condition of inversion, that the fracture had detached the posterior part of the trochanter major, together with the trochanter minor, and left the anterior part of the former process connected with the shaft. Precisely the same state of things existed in the case that fell under my own observation, as may be seen from the illustration appended to its history.[1]

It is worthy of notice, as Desault remarked, that the muscles which effect rotation outwards must be relaxed by the displacement consequent upon a fracture, as it will approximate their origins and insertions; and, there can be no doubt, that, in such cases, the eversion is counteracted by a very slight degree of force, more suggestive of passive than active resistance, or, in other words, of yielding to gravity rather than resulting from muscular contraction. Thus the effect of detaching the muscles of external rotation in causing inversion, would not be so much by preventing eversion, as by allowing the former condition to be produced through the agency of the smaller glutæi, so that the state of inversion would be the only one truly dependent upon muscular contraction. In cases of inversion, I have accordingly noticed that the resistance to adjustment of the broken bone was greater than in the usual state of eversion. Independently of other considerations, the diagnosis of this particular injury is of importance in regard to the prognosis, since whatever difference of opinion may still exist as to the reparation of fractures through the neck of the thigh-bone, there can be no question as to their ready reunion when seated in the trochanters, and in cases of eversion it is impossible to discriminate with certainty, by external examination between these two conditions, but when the toes are turned inwards there cannot be any doubt as to the fracture admitting of complete recovery. While, therefore, prudence will always require that fractures of the upper extremity of the thigh bone should be treated as curable, the surgeon must be cautious in promising a favourable result, unless inversion of the limb satisfies him that the case is certainly within reach of remedy.

In regard to the means of treatment there does not appear to be any room for choice, since the one unquestionably most comfortable to the patient, and most conducive to the end in view, is the "Long Splint of Desault." It was accordingly employed in the case which led to these remarks, and with such success that the patient left the hospital on the 13th of March without there being almost any appreciable difference between the limbs by external examination. Sir Astley Cooper objected to this means of treating fracture of the upper extremity of the thigh-bone, that the pressure caused by its extending force would be apt to cause mortification in the feet of old people, who are most liable to suffer this injury. But I have long been satisfied, and by example as well as precept, endeavoured to inculcate, that the long splint is not required to maintain extension, and that the good effects produced by it depend entirely upon the prevention of motion in the limb. For this purpose it must be long enough to extend from the patient's false ribs to a little beyond the sole of his foot, and broad enough to equal the height of the knee, as it lies in the straight position, so that, if the patient is an adult, it should be about four feet and a half long, by four inches and a half in breadth. Unless the breadth of the splint be thus proportioned to that of the limb, it cannot prevent rotation ; and unless long enough to reach the lower part of the chest, it must be equally incompetent to prevent motion of the hip-joint. Yet, in the Surgery of Desault, by Bichat, it is represented as extending no higher than to the trochanter major, and not more than three inches in breadth. It is, therefore, not surprising that the splints of this kind, employed in practice, are so frequently defective in their essential requisites, being almost always too narrow, and either too long or too short. One sent to me lately from New York is six feet long, and three inches and a half in breadth, with a longitudinal slit for fixing at different distances a screw, having a hook at its extremity, for the more effectual maintenance of extension. But from what has been said, it will, I trust, appear that any such extension must be useless in fracture, through the neck or trochanters ; and even when the shaft is concerned, an extending power cannot be required; since if the broken surfaces are properly adjusted, it is unnecessary; while, if they are not so, it is altogether inadequate to replace them. So soon as possible after the injury, the fracture should be carefully set, through due extension and manipulation, guided by regard to the form of the sound limb, and then, if in the shaft, be supported by two lateral splints of pasteboard, or split wood, long enough to extend from the pubis and trochanter major to the knee, and which may be secured by four or five looped bandages. The long splint, if properly applied, will then prevent rotation and insure perfect immobility. There should not be any bandages employed that cannot be undone without deranging the limb; and, therefore, instead of several long rollers, such as are frequently used, a sheet or table-cloth is preferable—the splint being wrapped in it, until merely enough is left for folding over the thigh and leg. Under this mode of treatment, for which all the requisites are so simple that they may always be procured extemporaneously, recovery is completed with great comfort to the patient, and no less credit to the surgeon, there being, in general, hardly, if any, perceptible difference in the limbs, instead of shortening to the extent of two inches or more, which happens so frequently, as to have been considered by some authorities as almost unavoidable.

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[1] Edinburgh Medical and Surgical Journal, 1826.

In conclusion, I beg to express my persuasion—

1. That the great requisites for treating fractures successfully, are coaptation and immobility.
2. That extension, or a struggle between the two opposing forces of muscular contraction and a mechanical power, is not consistent with either of these conditions.
3. That, therefore, extension should be abandoned in the treatment of fractures.—*Edinburgh Med. Journ.*, Oct., 1857.

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31. *Ovarian Dropsy cured by Simple Puncture.* By Prof. Oppolzer.—The subject of this interesting and unusual case was 42 years of age, and had menstruated regularly. Four years prior to her coming under observation she remarked a swelling over the pubes, accompanied with pain in the region of the left ilium. A year afterwards she became pregnant, and the delivery was natural. The abdomen, before this event, was remarkably large, and remained after parturition also much increased in size. Menstruation was re-established, and continued regular. The abdomen gradually attained the size which it presented on the woman being received into Oppolzer's Clinique. Pressure on the lower and left portion of the abdomen caused pain. Defecation was difficult, and the calls to pass water were frequent and distressing. There was no trace of albumen in the urine. The ankles were slightly œdematous.

The size of the tumour and the distressing symptoms rendered her unable to work. The operation of tapping was accordingly determined, with a view